**Unit 3 Practice Test: Geometric Properties**

Knowledge and Understanding

1. Sketch an example of each of these types of quadrilaterals. Show the diagonals on each sketch and indicate whether they are equal in length.
   1. Square
   2. Rectangle
   3. Parallelogram
   4. Trapezoid
2. A triangle has vertices D (-2, 5), E (-4, 1) and F (2, 3).
   1. Show that it is a right triangle
   2. Verify the midpoint of the hypotenuse of triangle DEF is equidistant from all three vertices.
3. Triangle ABC has the following vertices A (2, -1), B (10, -5) and C (6, 3).  
   1. Verify that Triangle ABC is an isosceles
   2. Verify that the centroid of Triangle ABC is (6, -1)

Application

1. On a town map, the coordinates of three schools are J (8, 13), K (10, 7) and L (14, 15). The town is planning to build a new swimming pool that is the same distance from all three schools. Determine the coordinates for the swimming pool.
2. Determine an equation for the line shown with each triangle  
    C (6, 5)

D

A (2, 2) B (7, 2)

Communication

1. Describe how you would fold a drawing to investigate the diagonals and properties of a rectangle.

Thinking and Inquiry

1. A new hospital will serve the four small towns shown on the map. Where would you build the hospital? Justify your answer.

A (10, 45), B (25, 20), C (42, 37) and D (33, 52)